



Acute Care Enhanced Surveillance (ACES)

USER INTERFACE MANUAL

UPDATED MARCH 2015

ACES USER INTERFACE

I. LOGIN PAGE

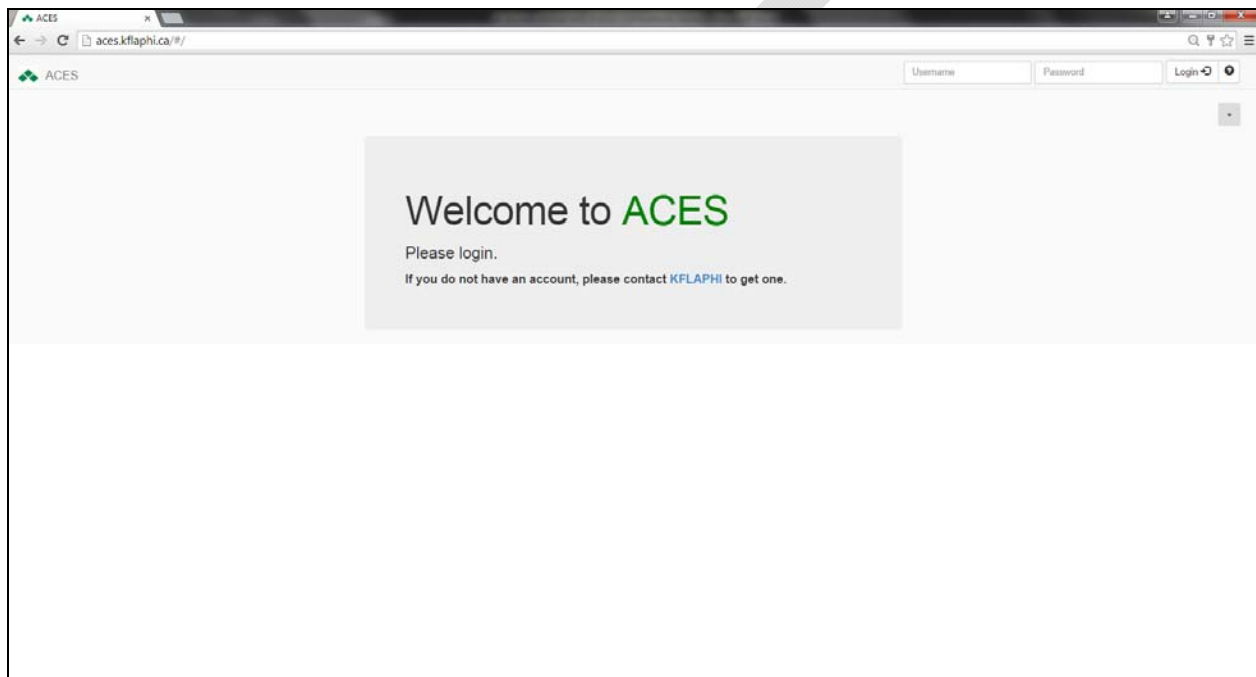


Figure 1: ACES Login page

Users can log into ACES (<http://aces.kflaphi.ca/#/>) using the username and password that was provided to them from the ACES administrators

II. MAIN LANDING PAGE

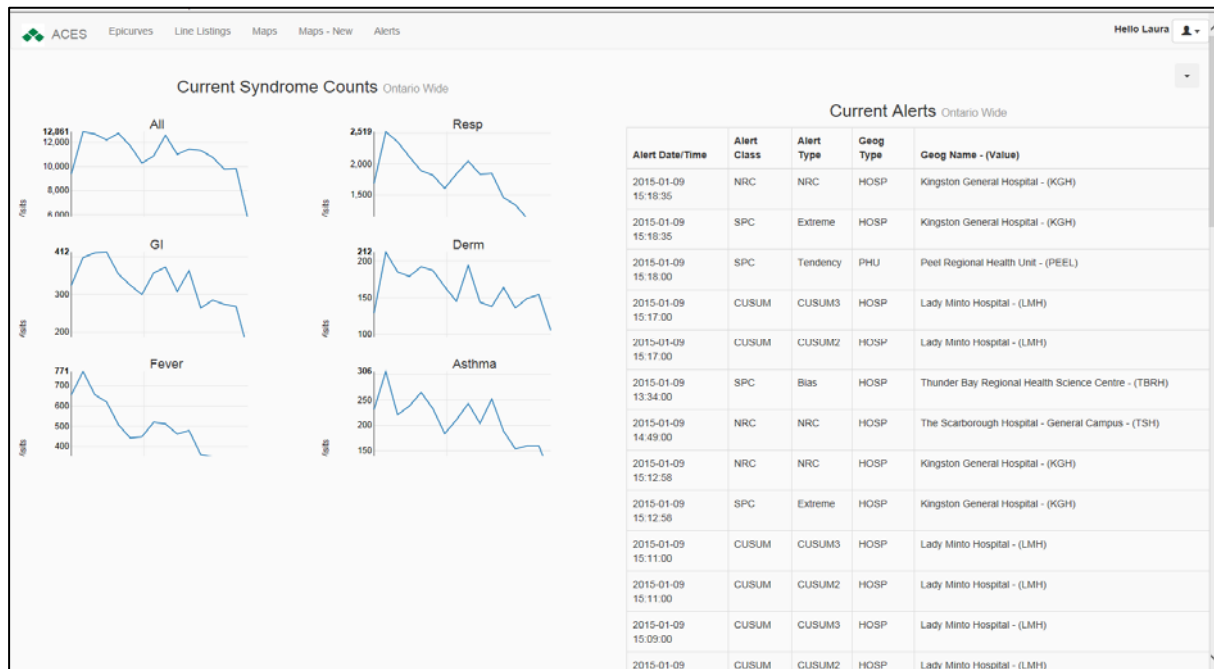


Figure 2: ACES Main

Upon logging in, the user will be directed to the main page (Figure 2). This page provides a simple overview of recent activity (past 2 weeks) captured by the surveillance system and notifies the user of any alerts.

On the left side of the page, there are a series of charts that display all ED visit counts across Ontario, as well as ED visit counts broken down by five different syndromes (Respiratory, Gastrointestinal, Dermatological, Fever/ILI, and Asthma).

The right side of the page displays a table with a list of the current alerts that have been generated by the system. Clicking on a specific alert will bring up a window displaying the alert graphically. Clicking the 'Data' tab within this window will provide additional details surrounding the alert. Using the grey arrow on the right upper corner of the alerts table allows the user to customize what information will be provided on this list (see Figure 3). Clicking on each individual heading will arrange the information according to that heading.



Figure 3: Drop down menu to customize the alerts table.

The subsequent four sections of this manual pertain to the following tabs shown in Figure 4 below. To navigate to each page on the site, click on the appropriate tab.

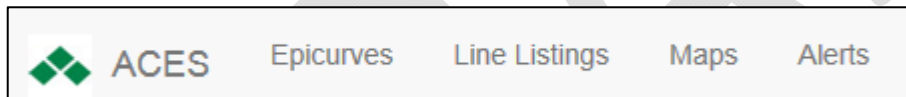


Figure 4: ACES features

III. EPICURVES

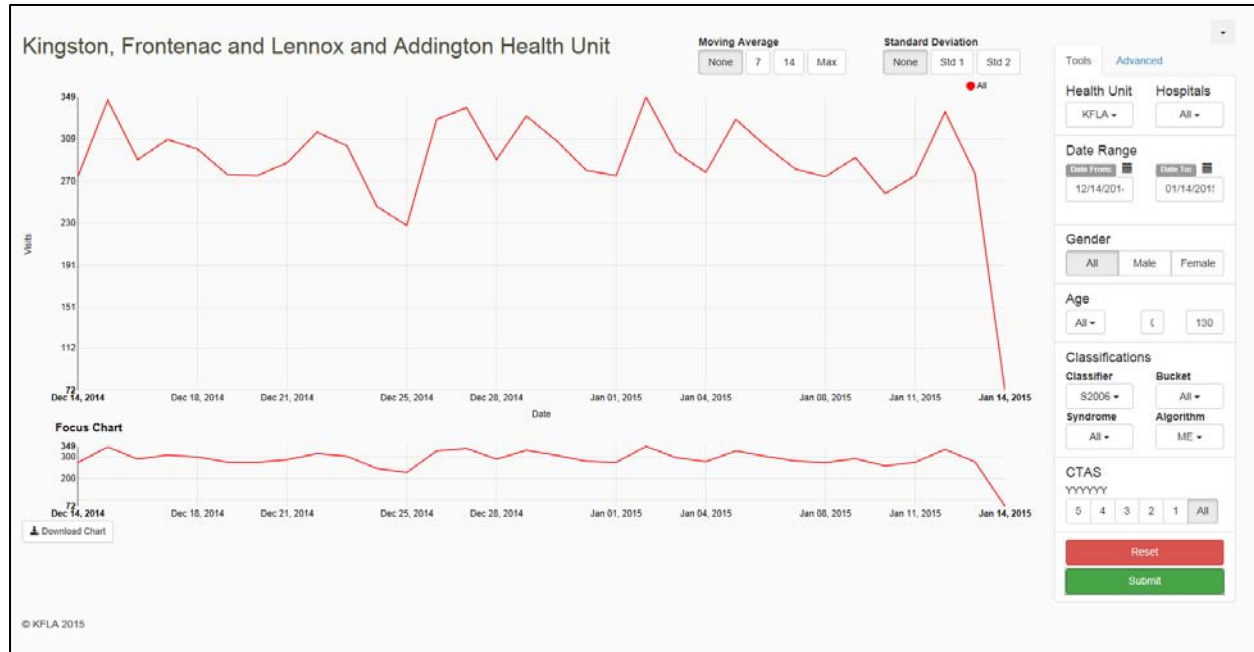


Figure 5: ACES Epicurve page

The Epicurves page allows the user to plot time-series graphs of case counts for various geographic regions for any time interval. In this section, options in the box on the right side of the screen allow the user to select the syndrome, hospital, time period, and specific patient attributes they would like to view data for.

Generating an Epicurve

To generate an Epicurve, data parameters must first be defined using the options found at the right hand side of the page.

At anytime, clicking **Submit** will generate the Epicurve with the desired parameters. Clicking **Reset** will reset all parameters back to the default setting.

Epicurve Parameters – ‘Tools’

The **Tools** tab on the right side of the page includes the following sections:

Health Unit and Hospitals

The first option is to choose which hospitals data will be displayed in the Epicurve using the dropdown menu. There is also the option to view data from all hospitals in the selected Health Unit. Which hospitals data can be displayed in the Epicurve depends on your user rights assigned to your login credentials. Hospital users will only have the option to view their own hospitals data. Users from the local Health Unit, however, will be able to view each hospital within their Health Unit, as well as all hospitals together.

Date Range

Under this section, the user can choose the time period for which the data will be displayed. Clicking *Date From* and *Date To* will bring up a calendar to choose the desired dates.

Gender

Gender may be specified as either: *Male*, *Female*, or *All* using the associated buttons. The default is set on *All*

Age

Clicking on the dropdown menu in this section gives six age group options for the Epicurve: *All*, *Child* (ages 0 to 17), *School Child* (ages 5 to 17), *Adult* (ages 18 to 64), *Senior* (ages 64 to 130), and *Adult + Senior* (ages 18 to 130). Alternatively, the user can manually input the desired age range. The default is set to *All* ages.

Classifications

Under this category, the user is able to make more specific requests as to what syndromic data will be displayed. Under **Syndrome**, the dropdown menu gives options for which syndrome the

The screenshot displays the 'Tools' tab with the 'Advanced' sub-tab selected. The interface includes several filter sections: 'Health Unit' with a dropdown set to 'KFLA'; 'Hospitals' with a dropdown set to 'All'; 'Date Range' with 'Date From' set to '12/15/2014' and 'Date To' set to '01/15/2015'; 'Gender' with buttons for 'All', 'Male', and 'Female'; 'Age' with a dropdown set to 'All' and input fields for 'C' and '130'; 'Classifications' with 'Classifier' set to 'S2006', 'Bucket' set to 'All', 'Syndrome' set to 'All', and 'Algorithm' set to 'ME'; and 'CTAS' with a row of buttons for '5', '4', '3', '2', '1', and 'All'. At the bottom, there are 'Reset' and 'Submit' buttons.

Tools					
Advanced					
Health Unit	Hospitals				
KFLA ▼	All ▼				
Date Range					
Date From: 12/15/2014	Date To: 01/15/2015				
Gender					
All	Male Female				
Age					
All ▼	C 130				
Classifications					
Classifier	Bucket				
S2006 ▼	All ▼				
Syndrome	Algorithm				
All ▼	ME ▼				
CTAS					
YYYYYY					
5	4	3	2	1	All
Reset					
Submit					

user would like to analyse. The user may also choose to display all syndromes together, which will show data for all hospital ED visits and admissions.

Under **Classifier**, the dropdown menu gives the option to either display syndrome data that was classified according to the older EDSS/RODS classifier by choosing *EDSS Standard Syndromes, v2006*, or by the new ACES classifier by choosing *ACES Standard Syndromes, v2014*. If the *EDSS Standard Syndromes* is selected, then only the 8 standard syndromes will be provided as options under the **Syndrome** dropdown menu (*Respiratory, Gastrointestinal, Fever/ILI, Asthma, Derm Infectious, Severe Infectious, Neuro Infectious* and *Other*). However, if the *ACES Standard Syndromes* classifier is selected there are over 80 syndrome options that the user can choose from (see Appendix B for a list and description of these).

When the **Classifier** is set to *ACES Standard Syndromes*, the **Bucket** dropdown menu gives the user more options to customize the epicurve using pre-defined groupings of certain syndromes of interest. These **Bucket** categories and their definitions are still a work-in-progress.

Lastly, the **Algorithm** dropdown menu provides 5 options for which algorithm was used to categorize the visits into the selected syndrome. The algorithm options are: *Balanced Winnow, C4.5 Decision Tree, Maximum Entropy, Naïve Bayes*, and *Winnow2*. *Maximum Entropy* is the default setting and was used in the old EDSS/RODS system. Descriptions of the new algorithms will follow in our User Manual once completed.

CTAS

CTAS stands for Canadian Triage Acuity Score. Under this section, the user can choose whether the epicurve will only display data from one of the 5 CTAS categories, or whether visits for all CTAS scores will be displayed. *All* is the default setting.

Epicurves Parameters – ‘Advanced’

Clicking on the **Advanced** tab at the top of the box on the right hand side of the screen provides more options to customize the Epicurve. NOTE: One of **Patients** or **Hospitals** will always have to have a ‘local’ option chosen.

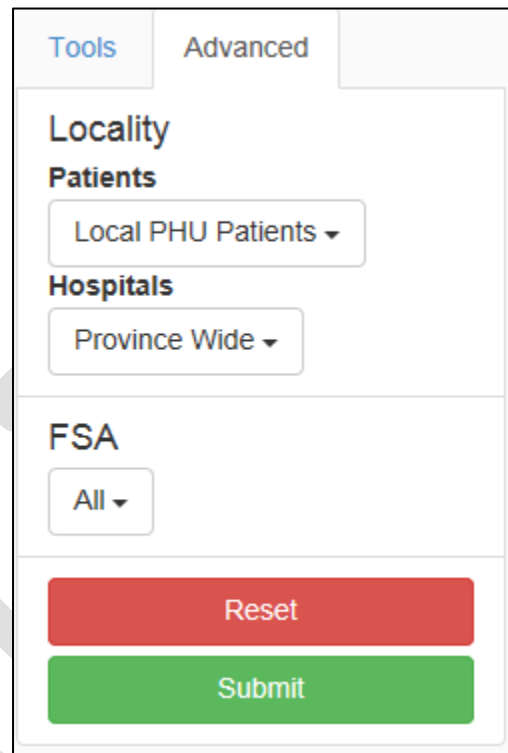
Locality

In the **Patients** dropdown menu, the user can choose whether the Epicurve will display data from patients who are *Local PHU Patients* (i.e. reside in that particular Health Unit), *Province Wide* (i.e. reside anywhere in Ontario, essentially an ALL category), or *Outside of PHU Patients* (i.e. patients who do not reside in that particular Health Unit, essentially shows patients who are visiting that health unit).

The **Hospitals** dropdown menu provides 3 options for further breaking down the data. Choosing *Local PHU Hospitals* will add additional lines to the Epicurve that show data broken down by hospital in that Health Unit. The legend will appear at the top right corner of the graph. An example of how this would look is shown in the next section below with the three hospitals in the KFL&A Health Unit. *Province Wide* will show data for local patients who go to any hospital that is connected to ACES. *Outside of PHU Hospitals* will show data for local patients visiting hospitals outside of their health unit of residence.

FSA

FSA stands for Forward Sortation Area, which are the first three digits of a postal code. This dropdown menu lists all FSAs in the selected Health Unit. By selecting a specific FSA, the epicurve will display the hospital visit data from patients who reside in that specific geography.



The screenshot shows the 'Advanced' tab of the Epicurves interface. It features three main sections: 'Locality' with 'Patients' and 'Hospitals' dropdowns, 'FSA' with an 'All' dropdown, and two action buttons at the bottom: 'Reset' (red) and 'Submit' (green). The 'Patients' dropdown is currently set to 'Local PHU Patients' and the 'Hospitals' dropdown is set to 'Province Wide'.

Tools	Advanced
Locality	
Patients	
Local PHU Patients ▼	
Hospitals	
Province Wide ▼	
FSA	
All ▼	
Reset	
Submit	

Moving Average and Standard Deviation

Normalize	Moving Average	Standard Deviation
Off On	None 7 14 Max	None Std 1 Std 2

At the top of the Epicurve there are options to add lines on the graph that display the **Moving Average** and/or **Standard Deviation**. Users can select a moving average of either *7 days*, *14 days*, or *Max* (gives an overall average for the data and time period selected). Lines showing either 1 Standard Deviation (*Std 1*), or 2 Standard Deviations (*Std 2*) can also be chosen.

There is also the option to **Normalize** the data. By selecting 'on', instead of graphing the total number of cases for a given syndrome, which has natural variance (e.g. by day of the week), this will plot the number of cases as a percentage of the total visits per day. NOTE: The graph for *All* visits is unaffected by this feature.

Epicurve Examples

Figure 6 shows an example of an Epicurve. The epicurve displays visit counts for all hospitals in the KFL&A Health Unit with the following parameters:

Syndrome = *RESP (respiratory)*

Gender = *All*

Age = *Adult*

Date Range = *December 15, 2014 to January 15, 2015*

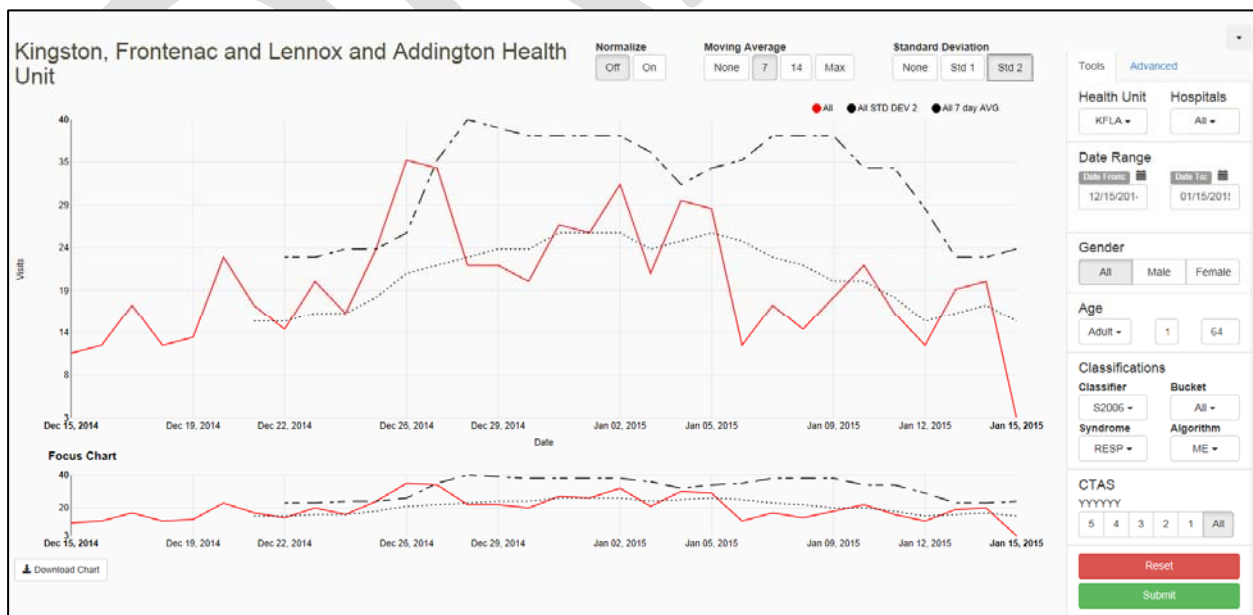


Figure 6: Example epicurve

The time period is displayed on the x-axis and the number of visits for the syndrome is on the y-axis. The **red** line displays the visit counts over the specified time period. The dotted line is displaying the *7 day moving average* (average number of reported cases for the current and preceding six days), and the dash + dotted line is displaying all cases plus *2 standard deviations*.

By using options in the **Advanced** tab, the graph below in Figure 7 shows the Epicurve for the *RESP (respiratory)* syndrome in *adults of all genders*, now broken down by hospital in the KFL&A Health Unit. This was done by choosing the option *Local PHU Hospitals* option under the **Hospitals** section. Also, by selecting *Local PHU Patients* in the **Patients** section, the graph is only showing the user a graph of residents in that health unit that are being seen at that health units local hospitals.

The **black** line represents data from all hospitals combined. The **red** line represents data from Hotel Dieu Hospital, the **green** line represents data from Kingston General Hospital, and the **blue** line represents data from the Lennox and Addington County General Hospital.

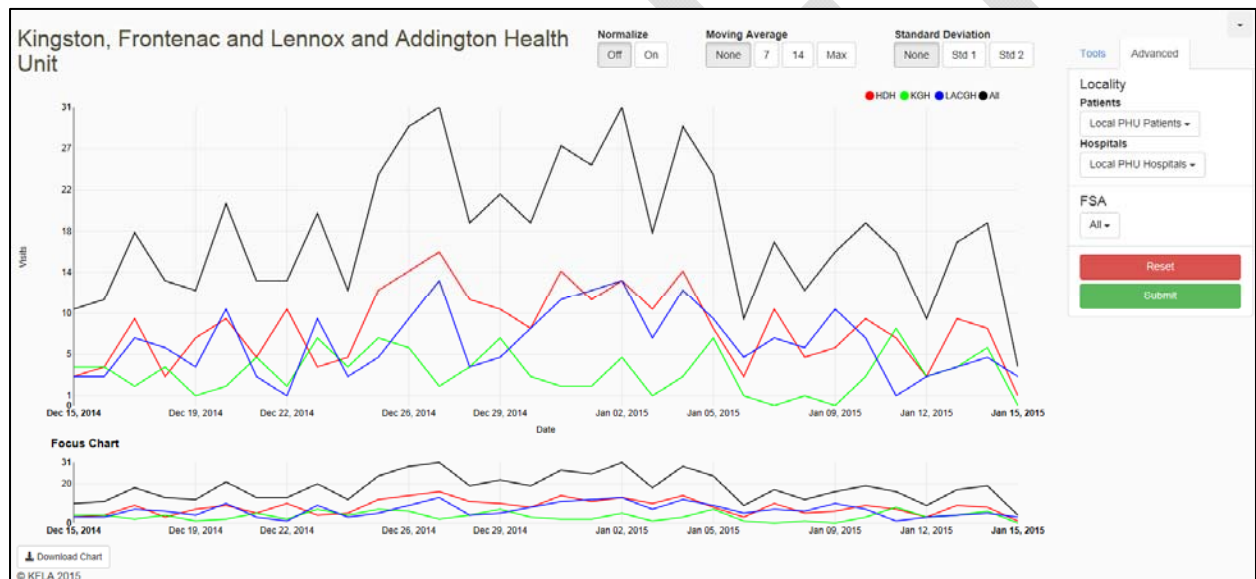
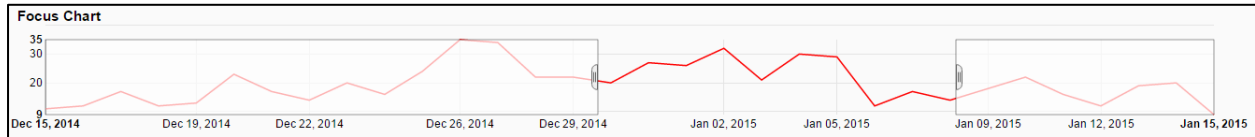


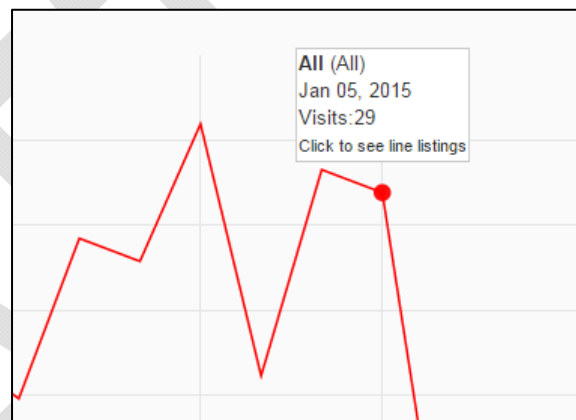
Figure 7: Example epicurve broken down by hospital

Additional Features

- Located below the Epicurve is a **Focus Chart**. This chart allows the user to easily adjust the graph to focus on a narrower time period without having to make a new graph. Clicking on the desired date(s) on the Focus Chart creates a window that can slide back and forth to either widen or narrow in on the date range.



- Hovering the mouse over a point on the Epicurve line will prompt a box that displays exactly how many visits there were on that day for that syndrome. In this box, selecting 'Click to see line listings' will open the line listings for that day, giving more details surrounding each visit for more in depth analysis.



- At the bottom left corner of the page, clicking on the button 'Download Chart' will download a picture of the current epicurve that the user has created. This allows the user to save their work in picture form to be used in presentations or reports.

IV. LINE LISTINGS

Date	Time	Age	Gender	FSALDU	Hospital	Syndrome	Complaint	CTAS	FRI	EMS Arrival	Patient LHIN
2015-01-23	14:49:35		F		KGH	Other		0	0	false	South East
2015-01-23	14:47:19		M		HDH	Other	HEAD INJURY	4	2	false	South East
2015-01-23	14:46:23		M		HDH	Other		0	0	false	South East
2015-01-23	14:42:35		F		KGH	Other		0	0	false	South East
2015-01-23	14:41:00		F		LACGH	Other	RT ANKLE INJURY MONDAY	4			South East
2015-01-23	14:38:14		F		HDH	Other		0	0	false	South East
2015-01-23	14:34:09		M		KGH	Other		0	0	false	South East
2015-01-23	14:33:00		F		LACGH	Other	SKINTEAR LEFT ARM	4			South East
2015-01-23	14:30:49		F		HDH	Respiratory	SORE THROAT	4	2	false	South East
2015-01-23	14:24:19		F		KGH	Other		0	0	false	South East
2015-01-23	14:17:33		M		HDH	Other		0	0	false	South East
2015-01-23	14:16:04		F		KGH	Other		0	0	false	South East
2015-01-23	14:15:00		M		LACGH	Other	1 FFT FI ANK/1 OW RACK PAIN X 1 WFFK	4			South East
2015-01-23	14:10:24		F		KGH	Other		0	0	false	South East
2015-01-23	14:10:07		F		HDH	Respiratory	COUGH, FEVER	4	2	false	South East
2015-01-23	14:08:00		M		LACGH	Other	"MY HEART IS POUNDING"	2			South East
2015-01-23	13:56:37		M		HDH	Other	INJURY TO TRUNK	4	2	false	South East
2015-01-23	13:56:30		M		KGH	Other		0	0	false	South East
2015-01-23	13:54:44		M		HDH	Other		0	0	false	South East
2015-01-23	13:50:00		M		GWMH	Fever/ILI	FEVER				South East
2015-01-23	13:43:43		F		HDH	Other		0	0	false	South East
2015-01-23	13:43:38		M		KGH	Other		0	0	false	South East
2015-01-23	13:38:13		F		HDH	Other		0	0	false	South East
2015-01-23	13:36:50		M		KGH	Other	Imaging Results	4	2	false	South East
2015-01-23	13:36:04		F		KGH	Other		0	0	false	South East

Total Items: 2247 [CSV Export](#) Page Size: 25

Figure 8: ACES Line Listing

Line listings display emergency department visits as a textual list with the standard patient information we receive directly from hospitals (*Date, Time, Age, Gender, FSALDU, Hospital, Syndrome (assigned by ACES after classifier has 'read' the chief complaint), Complaint, CTAS, FRI, EMS Arrival, and Patient LHIN*). When the user first navigates to the **Line Listings** page, they are presented with data from the past week for their assigned user role (i.e PHU, Hosp. only etc.). The box on the right-hand side of the screen allows the user to set the parameters to generate the line listing which are the same as those described in the Epicurves section.

Generating a Line Listing

To generate a line listing, enter the desired parameters into the box on the right side of the screen. Selecting 'Submit' at any time will generate the Line List with the details provided. Selecting 'Reset' will reset the screen to the default settings.

Health Unit and Hospitals

The first option is to choose which hospitals' visit details will be shown. There is also the option to view data from all hospitals in the selected Health Unit. Which hospitals information can be displayed in the line listing depends on the user accessing ACES. Hospital users will only have the option to view their own hospitals data. Users from the local Health Unit, however, will be able to view each hospital in their Health Unit, as well as all hospitals together.

Date Range

Under this section, the user can choose the desired time period. Clicking *Date From* and *Date To* will prompt a calendar to choose the desired dates.

Gender

Gender may be specified as either *Male*, *Female*, or *All*.

Age

Clicking on the dropdown menu in this section gives six age group options: *All*, *Child* (ages 0 to 17), *School Child* (ages 5 to 17), *Adult* (ages 18 to 64), *Senior* (ages 64 to 130), and *Adult + Senior* (ages 18 to 130). Alternatively, the user can manually input the desired age range.

Classifications

Selecting a specific **Syndrome** from the dropdown menu will list the visit details for patients whose chief complaint or admission diagnosis was categorized into that syndrome. The user may also choose to display all syndromes together, which will list visit information for all hospital ED visits and admissions.

Under **Classifier**, the dropdown menu gives the option to either display syndrome data that was classified according to the older EDSS/RODS system by choosing *EDSS Standard Syndromes*

Tools		Advanced	
Health Unit		Hospitals	
KFLA ▼		All ▼	
Date Range			
Date From:		Date To:	
01/13/2011		01/20/2011	
Gender			
All		Male	
		Female	
Age			
All ▼		C	
		130	
Classifications			
Classifier		Bucket	
S2006 ▼		All ▼	
Syndrome		Algorithm	
All ▼		ME ▼	
CTAS			
YYYYYY			
5		4	
3		2	
1		All	
Reset			
Submit			

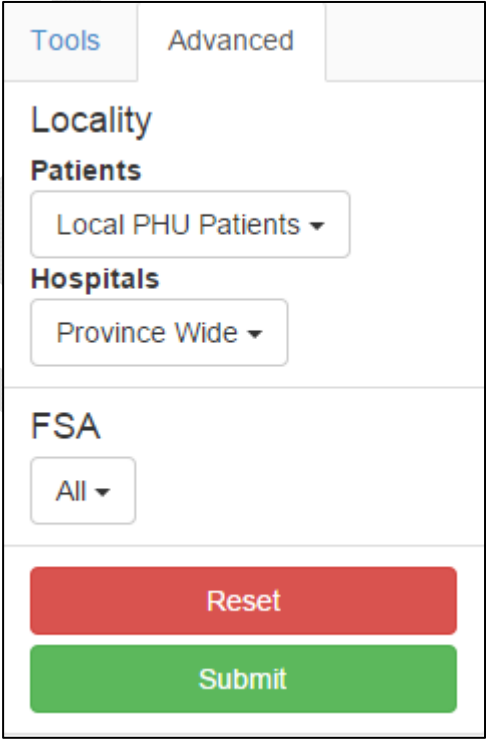
v2006, or by the new ACES system by choosing *ACES Standard Syndromes v2014*. Please refer to the Epicurves section above for further information on the **Classifier**, **Bucket** and **Algorithm** options.

CTAS

CTAS stands for Canadian Triage Acuity Score. Under this section, the user can choose whether the line listing will only list visits that were categorized into one of the 5 CTAS categories, or whether visits for all CTAS scores will be displayed.

Advanced

The 'Advanced' tab allows users to further specify which hospital visits will be included of their line listing. Please refer to the Epicurves section above for further information on the **Locality – Patients**, **Locality – Hospitals** and **FSA** options for your line list search.



The screenshot shows the 'Advanced' tab selected in the ACES User Interface. The interface includes three sections for filtering search results: 'Locality' with a 'Patients' dropdown set to 'Local PHU Patients', 'Hospitals' with a dropdown set to 'Province Wide', and 'FSA' with a dropdown set to 'All'. At the bottom of the form are two buttons: a red 'Reset' button and a green 'Submit' button.

V. MAP

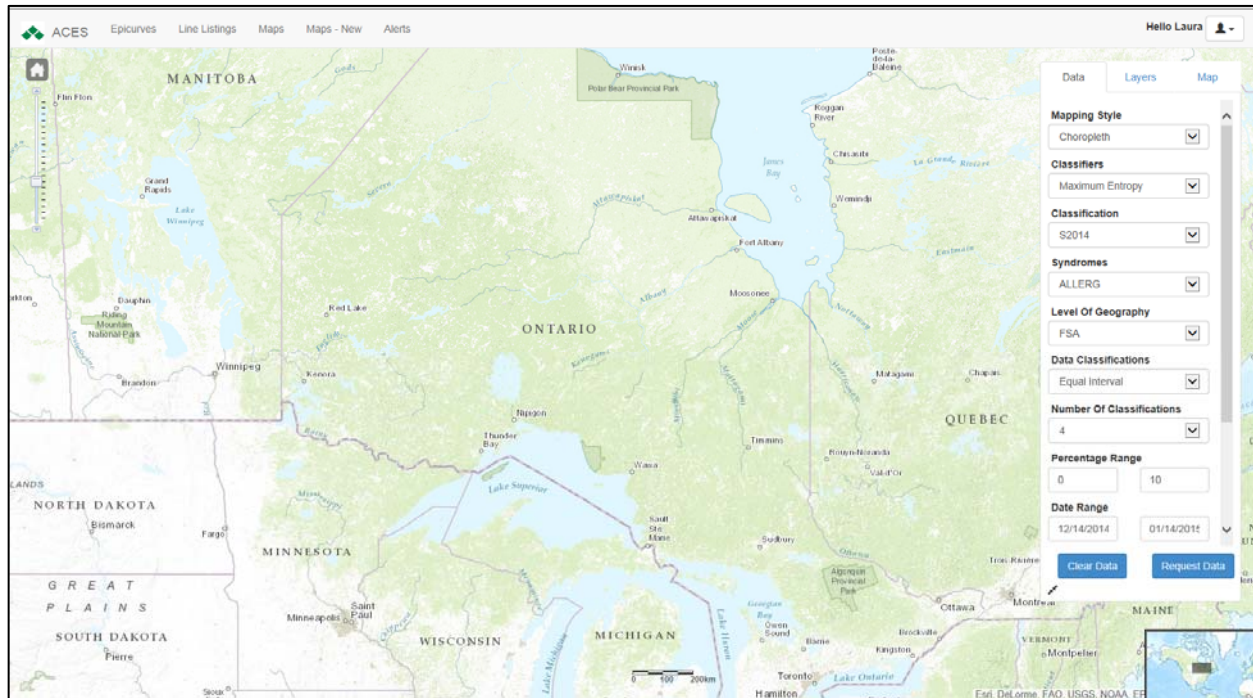


Figure 9: ACES Map page

The **Map** page (Figure 9) allows the user to examine the spatial distribution of ED visits and admissions. When the user navigates to this page, they are first presented with a map view of Ontario. Users can move the map to the desired location using their mouse. The bar on the top left side of the page allows users to zoom in or out of the map. The picture of a house above this bar takes the map to the default view.

The right side of the page contains a box with various features that allow the user to manipulate the map tool – these features are described in the next section.

Map Features – ‘Data’

The box on the right hand side of the page provides options for customizing the map.

In the ‘Data’ tab of this box, under each heading is a drop down menu providing options for that category. Entering the desired parameters will give the necessary information to customize the map.

Mapping Style

There are two options on how the data can be visualized on the Map:

Chloropleth – This option displays the ED visits for the selected syndrome by colour, with darker colours representing more visits in the region compared to lighter colours (Figure 10 is showing ‘ILI’ syndrome data by ‘Health Unit’ level of geography). Hovering the mouse over one of the outlined regions will provide more details on: total visits for the syndrome, total ED visits, and the percentage of total ED visits that are for the selected syndrome.

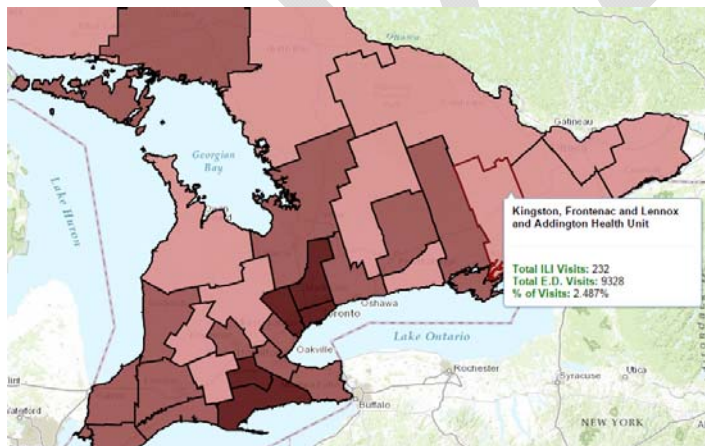


Figure 10: Example of *Chloropleth* mapping style

DataLayersMap

Mapping Style

Choropleth

Classifiers

Maximum Entropy

Classification

S2014

Syndromes

ALLERG

Level Of Geography

FSA

Data Classifications

Equal Interval

Number Of Classifications

4

Percentage Range

0

10

Date Range

12/14/2014

01/14/2015

Gender

All

Age Group

All

Age Range

0

130

Clear Data

Request Data

Proportional Symbols – This option displays the ED visit data for the selected syndrome as a circle over the geographic region, with the circle size increasing with increasing number of visits for that syndrome (Figure 11 is showing the same information as Figure 10 but in a different graphic method). Hovering the mouse over the circle for the region of interest will provide more detail on: total visits for the syndrome, total ED visits, and the percent of total visits for that are for the selected syndrome.

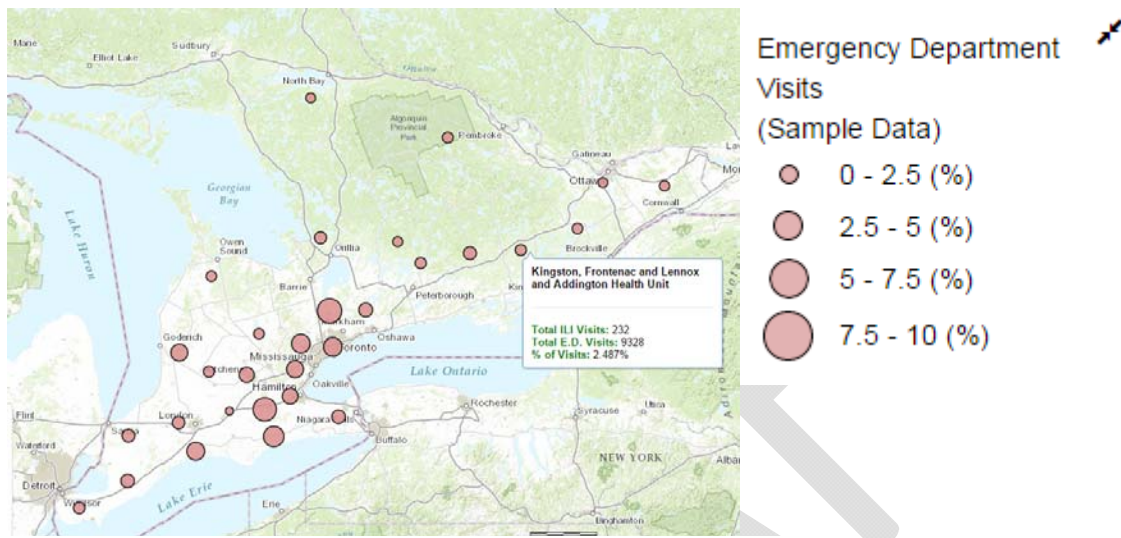


Figure 11: Example of *Proportional Symbols* mapping style with legend

Classifiers

The classifiers drop down menu offers 5 options previously described in the Epicurves section.

Classification

This option allows users to classify the data being displayed by either the older classification system which was used in the previous EDSS/RODS system (by choosing *S2006*) or by the new ACES classifications system (by choosing *S2014*).

Syndromes

Under this tab, users can choose which syndrome will be displayed on the map. There are over 80 syndromes to choose from under classification *S2014* and 8 syndromes under classification *S2006*.

Level of Geography

ACES can display ED visit and admission information by different levels of geography: *FSA*, *Public Health Unit*, and *LHIN*.

Data Classifications

When using the Chloropleth mapping style, there are three different ways in which the data can be classified. These include: *Equal Interval*, *Quantile*, and *Standard Deviation*.

Equal Interval will map the data in equally spaced out gradients based the normalized values (Percentages) for that syndrome in the chosen geography. The number of gradients is determined by the user when they specify how many **Classifications** they desire and the size of those gradients is determined by the user when they specify the **Percentage Range**. For example, if a user chooses '6' under **Classifications** and a **Percent Range** between '0-24' the legend will have 6 equal gradients of 4% each.

Quantile is a more simplistic method to map the data and all the user needs to define are the number of quantiles they desire. If 4 quantiles are chosen, then Q1 will show 25% of the data making up the least number of visits under that syndrome and Q4 will show 25% of the data making up the most number of visits (with Q3 and Q4 making up the other 50% of the data).

Standard Deviation will map the data based on a range of standard deviations below and above the mean for the syndrome chosen and based on the geography type selected. The legend will show gradients between +/- 3 standard deviations in 1 standard deviation categories. No further classification definitions are needed under this category.

Number of Classifications

This menu option is only valid when using the 'Chloropleth' mapping style and either the *Equal Interval* and *Quantile* **Data Classifications**. Users have the option between choosing 4, 5, 6 or 10 under this menu option.

Percentage Range

This menu option is only valid when using the 'Proportional Symbols' **Mapping Style**, or when using the 'Chloropleth' **Mapping Style** along with the 'Equal Interval' **Data Classification**. This option allows the user to choose the percent range for their legend under the above stipulations. With this option the user needs to be aware that for each syndrome the percent range can vary and therefore a good knowledge of how the syndrome in question behaves is needed. For instance, when mapping the Respiratory syndrome in the summer months, a basic guideline would be to choose a percent range between 0 and 20%. However, in the winter months the upper extreme needs to be increased because if a given HU has a higher percentage than what was chosen, it will not be included in the legend.

Date Range, Gender, Age Group, Age Range

With these categories the user can customize the map to display hospital data by gender, age, and desired time period.

Once all desired parameters are entered, clicking the 'Request Data' button will generate the map. Pressing 'Clear Data' will clear the map created and revert back to the default settings. NOTE: While the user can in fact choose as wide a date range as they like, it is advised to use windows of a month or less. A request for large time periods of data can cause the system to time out and crash.

Map Features – 'Layers'

The second tab in the box on the right side of the map screen, named 'Layers', allows users to add additional information to their maps that could be useful for public health purposes. Checking the desired layer, for example *Daycares*, will add all daycare facilities on the map. Clicking 'Clear Layers' will clear all layers added. NOTE: Users can click on multiple layers but keep in mind that the more that are added the more 'messy' the map may become. The ACES team is also considering adding more layers as we continue the systems' development.

Map Features – 'Map'

The 'Map' Tab provides different viewing options for the base map. For instance, the default setting is *Topo*, however the other display options include: *Street*, *Satellite*, *Hybrid*, *Gray*, *Oceans*, *National Geographic*, and *OSM*. Choosing the desired option and clicking 'Update' will change the base map.

Under this tab, the user can also change the Layer Color and Border Color as desired.

Data	Layers	Map
	Daycares	☒
	Pharmacies	☐
	PHU Satellite Offices	☐
	Public Health Units	☐
	Long Term Care	☐
	Schools	☐
	FSA	☐
	Traffic Cameras	☐
	Urban Areas	☐
	LHIN	☐

Data	Layers	Map
Topo ▼		
Layer Color ▼ Border Color ▼		
Reset Update		



VI. ALERTS

Kingston, Frontenac and Lennox and Addington Health Unit

Click arrow below for more options.

Alert Date/Time	Alert Class	Alert Type	Syndrome	Geog Type	Geog Name - (Value)	Alert ID
2015-01-22 08:45:25	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491854
2015-01-22 08:45:25	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491853
2015-01-22 08:43:00	NRC	NRC	NEURO	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491830
2015-01-22 08:43:00	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491829
2015-01-22 08:43:00	CUSUM	CUSUM2	HOSP	HOSP	Lennox & Addington County General Hospital - (LACGH)	3491827
2015-01-22 08:43:00	CUSUM	CUSUM3	HOSP	HOSP	Lennox & Addington County General Hospital - (LACGH)	3491828
2015-01-22 08:41:59	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491812
2015-01-22 08:41:59	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491811
2015-01-22 08:40:34	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491798
2015-01-22 08:40:34	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491797
2015-01-22 08:39:46	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491788
2015-01-22 08:39:46	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491784
2015-01-22 08:32:00	CUSUM	CUSUM2	HOSP	HOSP	Lennox & Addington County General Hospital - (LACGH)	3491719
2015-01-22 08:32:00	CUSUM	CUSUM3	HOSP	HOSP	Lennox & Addington County General Hospital - (LACGH)	3491720
2015-01-22 08:31:56	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491711
2015-01-22 08:31:56	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491710
2015-01-22 08:31:21	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491707
2015-01-22 08:31:21	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491706
2015-01-22 08:26:00	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491670
2015-01-22 08:26:00	CUSUM	CUSUM2	HOSP	HOSP	Lennox & Addington County General Hospital - (LACGH)	3491668
2015-01-22 08:26:00	CUSUM	CUSUM3	HOSP	HOSP	Lennox & Addington County General Hospital - (LACGH)	3491669
2015-01-22 08:25:28	SPC	OnEdge	OTHER	PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	3491649

Total Items: 2326

CSV Export

Page Size: 25

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Health Unit: KFLA Hospitals: All

Date Range: 01/15/2015 to 01/22/2015

Submit

Figure 12: ACES alert page

The **Alerts** page (Figure 12) lists all alerts being generated by the ACES system.

The table that lists the alerts includes columns with information for *Date/Time of alert*, *Alert Class* (CUSUM, SPC or NRC), *Alert Type* (numerous), *Syndrome*, *Geog Type*, *Geog Name*, and the *Alert ID*. Clicking on the grey arrow at the top right corner of the table prompts a menu that allows the user to customize which columns will be displayed. Clicking on one of these columns will list the alerts by that column. NOTE: Further detail on *Alert Class* and *Alert Type* will be made available in the near future.

Alert Date/Time	Alert Class	Alert Type	Syndrome	Geog Type	Geog Name - (Value)	Alert ID
2015-01-22 15:09:47	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	
2015-01-22 15:09:19	CUSUM	CUSUM3		PHU	Hastings and Prince Edward Counties Health Unit - (HPE)	
2015-01-22 15:06:46	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	
2015-01-22 15:06:31	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	
2015-01-22 15:03:00	CUSUM	CUSUM3		PHU	Hastings and Prince Edward Counties Health Unit - (HPE)	
2015-01-22 15:03:00	CUSUM	CUSUM3		HOSP	Lennox & Addington County General Hospital - (LACGH)	
2015-01-22 15:02:07	CUSUM	CUSUM3		PHU	Kingston, Frontenac and Lennox and Addington Health Unit - (KFLA)	
2015-01-22 14:54:00	CUSUM	CUSUM3		HOSP	Lennox & Addington County General Hospital - (LACGH)	

Search...

Choose Columns:

- ☒ Alert Date/Time
- ☒ Alert Class
- ☒ Alert Type
- ☒ Syndrome
- ☒ Geog Type
- ☒ Geog Name - (Value)
- ☒ Alert ID

The box on the right side of the table can be used to specify whether the list will display all alerts being generated in the health unit or whether only alerts at a specific hospital will be listed. This is done by selecting the desired hospital in the drop-down menu. The options available to each user are dependent on their level of access

In this box, the user can also specify the **date range** for the alerts being listed.

Clicking on the alert of interest will bring up a window with a graph that displays the hospital visit data for the two weeks leading up to the event (Figure 13).

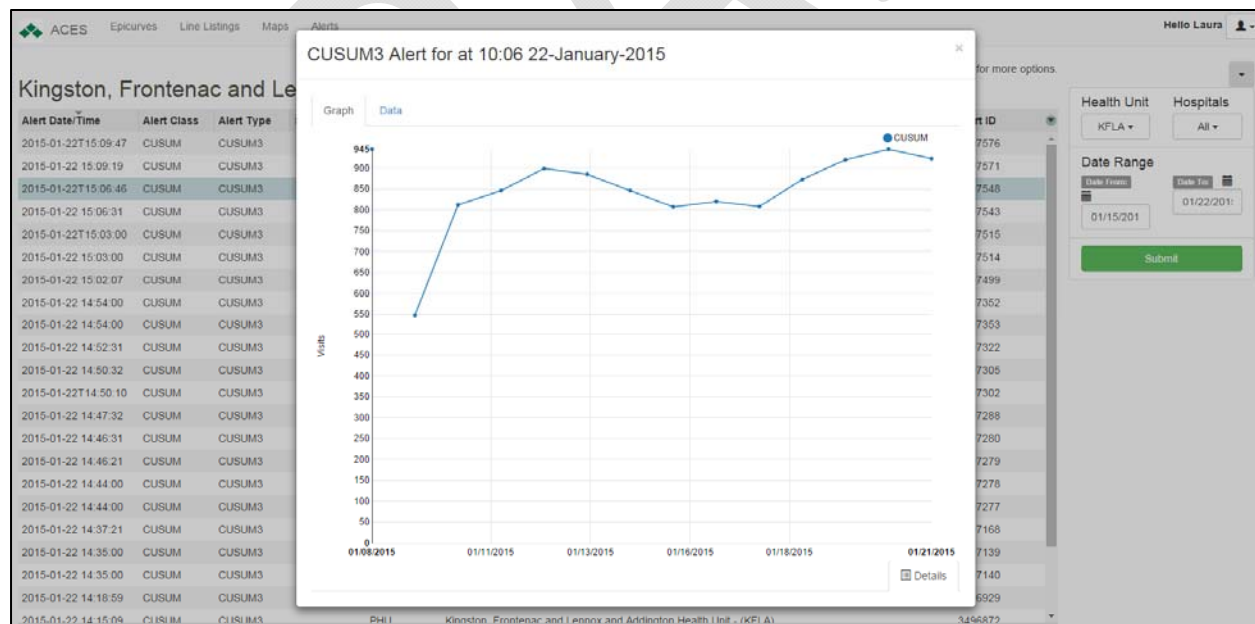


Figure 13: Graphical representation of alert

Choosing the 'Data' tab within this window (Figure 13) will list aggregate details pertaining to the alert for more in-depth analysis (Figure 14).

CUSUM3 Alert for at 10:06 22-January-2015							
Graph Data							
24 Hrs Ending	CUSUM	Visits	Avg. Visits	Std Dev Visits	Z	Geography	Class
10:06 22-January-2015	0.87701	321	285.2857	32.9278	0.08462	KFLA	
10:06 21-January-2015	0.79239	292	281.7143	26.3168	-0.60916	KFLA	
10:06 20-January-2015	1.40155	310	281.2857	26.6190	0.07871	KFLA	
10:06 19-January-2015	1.32284	343	281.4286	26.5070	1.32284	KFLA	
10:06 18-January-2015	0.00000	267	282.2857	26.4746	-1.57737	KFLA	
10:06 17-January-2015	0.00000	263	282.4286	26.4566	-1.73436	KFLA	
10:06 16-January-2015	0.00000	278	285.7143	22.9544	-1.33607	KFLA	
10:06 15-January-2015	0.00000	279	285.5714	22.7293	-1.28912	KFLA	
10:06 14-January-2015	0.00000	250	287.1429	25.5501	-2.45373	KFLA	
10:06 13-January-2015	0.17257	317	288.0000	24.7319	0.17257	KFLA	
10:06 12-January-2015	0.00000	318	295.2857	23.9841	-0.05294	KFLA	
10:06 11-January-2015	0.00000	264	299.0000	23.9583	-2.46087	KFLA	
10:06 10-January-2015	0.00000	264	259.0000	116.3930	-0.95704	KFLA	
10:06 9-January-2015	0.00000	284	256.6667	127.3227	-0.78532	KFLA	

Figure 14: Alert specifics under Data tab

APPENDIX

APPENDIX A - List of Public Health Units and Hospitals within those Health Units Participating in EDSS/ACES

Health Unit (Key to Table Below)	Hospitals within Health Unit	Date linked to ACES
APH	Blind River District Health Centre (BRH)	Feb-2013
	Lady Dunn Health Centre (WAW)	Jul-2011
	Sault Area Hospital (SAH)	Sept-2014
	St. Joseph's General Hospital (QEL)	Jul-2011
CKPHU	Chatham-Kent Health Alliance – Chatham (CKHA)	Jun-2013
	Chatham-Kent Health Alliance – Wallaceburg (CKHAW)	Jun-2013
DRHD	Lakeridge Health – Bowmanville (LHB)	Sep-2013
	Lakeridge Health – Oshawa (LHO)	Sep-2013
	Lakeridge Health – Port Perry (LHP)	Sep-2013
	Rouge Valley Health System – Ajax and Pickering (APG)	Sep-2013
EOHU	Cornwall Community Hospital	TBD
	Glengarry Memorial Hospital (HGMH)	Apr-2010
	Hawkesbury and District General Hospital	TBD
	Winchester District Memorial Hospital	TBD
GBHU	Grey Bruce Health Services – Lion's Head (LHSH)	Nov-2011
	Grey Bruce Health Services – Markdale (MDSH)	Nov-2011
	Grey Bruce Health Services – Meaford (MFSH)	Nov-2011
	Grey Bruce Health Services – Owen Sound (OSSH)	Nov-2011
	Grey Bruce Health Services – Southampton (SSH)	Nov-2011
	Grey Bruce Health Services – Tobermory (TSH)	Nov-2011
	Grey Bruce Health Services – Wiarton (WSH)	Nov-2011
	Hanover and District Hospital (HADH)	Nov-2011
	South Bruce Grey Health Centre – Chesley (CSH)	Nov-2011
	South Bruce Grey Health Centre – Durham (DSH)	Nov-2011
	South Bruce Grey Health Centre – Kincardine (KSH)	Nov-2011
	South Bruce Grey Health Centre – Walkerton (SWH)	Nov-2011
HKPRDHU	Campbellford Memorial Hospital	TBD
	Haliburton Highlands Health Services	TBD

Health Unit (Key to Table Below)	Hospitals within Health Unit	Date linked to ACES
	Northumberland Hills Hospital	TBD
	Ross Memorial Hospital	TBD
HRHD	Halton Healthcare Services – Georgetown (GEO)	Oct-2011
	Halton Healthcare Services – Milton (MIL)	Oct-2011
	Halton Healthcare Services – Oakville (OAK)	Oct-2011
	Joseph Brant Memorial Hospital (JBMH)	Oct-2011
HPH	Hamilton Health Sciences Corporation – Hamilton General Hospital and Urgent Care Centre (HAH)	Sep-2011
	Hamilton Health Sciences Corporation – Juravinski Hospital and Cancer Centre (HEN)	Sep-2011
	Hamilton Health Sciences Corporation – McMaster Children's Hospital (MCM)	Sep-2011
	St. Joseph's Healthcare Hamilton (ST01)	Sep-2011
HPECHU	Quinte Healthcare Corporation – Belleville (BGH)	Sep-2005
	Quinte Healthcare Corporation – North Hastings (NHH)	Sep-2005
	Quinte Healthcare Corporation – Prince Edward County (PEC)	Sep-2005
	Quinte Healthcare Corporation – Trenton (TMH)	Sep-2005
KFLA	Hotel Dieu Hospital (HDH)	Sep-2005
	Kingston General Hospital (KGH)	Sep-2005
	Lennox & Addington County General Hospital (LACGH)	Sep-2005
LAMBTON – CHSD	Bluewater Health - Sarnia (BWH)	Jun-2013
	Charlotte Eleanor Englehart Hospital of Bluewater Health –Petrolia (BWHP)	Jun-2013
LGLDHU	Brockville General Hospital (BRGH)	Jul-2009
	Carleton Place and District Memorial Hospital (CCC)	Oct-2014
	Perth & Smiths Falls District Hospital – Great War Memorial Site – Perth (GWMH)	Nov-2008
	Perth & Smiths Falls District Hospital - Smiths Falls Site (SFH)	Jul-2008
NRPH	Niagara Health System – Douglas Memorial Hospital Site (DMH)	Feb-2010
	Niagara Health System – Greater Niagara General Site (GNG)	Feb-2010
	Niagara Health System – Port Colborne General Site (PCG)	Feb-2010
	Niagara Health System – St. Catharine's General Site (SCG)	Feb-2010
	Niagara Health System – Welland Hospital Site (WHS)	Feb-2010
NBPH	West Nipissing General Hospital (WNGH & WNG)	Apr-2010
	North Bay General Hospital (NBGH)	Apr-2010

Health Unit (Key to Table Below)	Hospitals within Health Unit	Date linked to ACES
	Mattawa General Hospital (MH & MGH)	Apr-2010
NWHU	Atikokan General Hospital (ATGH)	Sep-2010
	Lake-Of-The-Woods District Hospital (LWDH)	Aug-2010
	Riverside Health Care Facilities Inc. (RHF)	Sep-2010
	Sioux Lookout Meno Ya Win Health Centre (SLH)	Sep-2010
OPH	Queensway Carleton Hospital (QOQ)	Oct-2014
PEEL	Trillium Health Partners - Credit Valley Hospital (CVH)	Nov-2011
	Trillium Health Partners - Mississauga Hospital (MISS)	Feb-2013
	William Osler Health System - Brampton Civic Hospital (BCH)	Jan-2011
PCCHU	Peterborough Regional Health Centre (PRH)	Apr-2009
PHU	MICs Group of Health Services – Anson General Hospital (AGH)	Jul-2011
	MICs Group of Health Services – Bingham Memorial Hospital (BMH)	Jul-2011
	MICs Group of Health Services – Lady Minto Hospital (LMH)	Jul-2011
	Hôpital de Smooth Rock Falls Hospital (FSR)	Jul-2011
	Hôpital Notre-Dame Hospital (NDH)	Feb-2013
	Hornepayne Community Hospital (HPH)	Feb-2013
	Sensenbrenner Hospital (SBH)	Feb-2013
	Timmins & District General Hospital (TDH)	Jul-2011
SMDHU	Georgian Bay General Hospital - Midland Site (GBGH)	Feb-2010
	Muskoka Algonquin Healthcare – Huntsville & Bracebridge (MAH)	Feb-2010
	North Simcoe Hospital Alliance – Huronia District Hospital	TBD
	Orillia Soldiers' Memorial Hospital (OSMH)	Feb-2010
	Royal Victoria Hospital (RVH)	May-2010
	Stevenson Memorial Hospital	TBD
SDHU	Chapleau General Hospital (CHS)	Jul-2011
	Espanola Regional Hospital and Health Centre (EGH)	Feb-2013
	Manitoulin Health Centre (MHC)	Feb-2013
	Sudbury Regional Hospital (SRH)	Feb-2011
TBDHU	Dryden Regional Health Centre (DRH)	Sep-2010
	Geraldton District Hospital (GDHO)	Sep-2010
	Manitouwadge General Hospital (MGHO)	Sep-2010
	McCausland Hospital (MCCA)	Sep-2010
	Nipigon District Memorial Hospital (NDMH)	Sep-2010
	Thunder Bay Regional Hlth Sciences Centre (TBRH)	May-2010

Health Unit (Key to Table Below)	Hospitals within Health Unit	Date linked to ACES
	Wilson Memorial General Hospital (WMGH)	Sep-2010
THU	Englehart And District Hospital (EDH)	Jul-2011
	Kirkland And District Hospital (KDH)	Jul-2011
	Temiskaming Hospital (TEM)	Jul-2011
TPH	The Hospital for Sick Children	TBD
	Mount Sinai Hospital (MSH)	Oct-2013
	North York General Hospital	TBD
	Rouge Valley Health System – Centenary (RVC)	Sept-2013
	The Scarborough Hospital – General Site (TSH)	Jan-2014
	The Scarborough Hospital – Birchmount Site (TSHB)	Jan-2014
	St. Joseph's Health Centre (STJOE)	Jun-2010
	St. Michael's Hospital (SMH)	Mar-2013
	Sunnybrook Health Sciences Centre	TBD
	Toronto East General Hospital	Oct-2014
	University Health Network – General Site (TGH)	July-2013
	University Health Network – Princess Margaret (PMH)	July-2013
	University Health Network – Western Site (TWH)	July-2013
	William Osler Health System - Etobicoke General Hospital (EHC)	Jan-2011
WECHU	Hôtel-Dieu Grace Hospital (HDGH)	Jun-2013
	Leamington District Memorial Hospital (LDMH)	Jun-2013
	Windsor Regional Hospital (WRH)	Jun-2013

Key to Table Above:

APH: Algoma Public Health
 CKPHU: Chatham-Kent Public Health Unit
 DRHD: Durham Region Health Department
 EOHU: Eastern Ontario Health Unit
 GBHU: Grey Bruce Health Unit
 HKPRDHU: Haliburton, Kawartha, Pine Ridge District Health Unit
 HRHD: Halton Region Health Department
 HPH: Hamilton Public Health
 HPECHU: Hastings and Prince Edward County Health Unit
 KFLA: KFL&A Public Health
 LAMBTON – CHSD: Lambton – Community Health Services Dept.
 LGLDHU: Leeds, Grenville and Lanark District Health Unit
 NRPH: Niagara Region Public Health

NBPH: North Bay Public Health
 NWHU: Northwestern Health Unit
 OPH: Ottawa Public Health
 PEEL: Peel Public Health
 PCCHU: Peterborough County City Health Unit
 PHU: Porcupine Health Unit
 SMDHU: Simcoe Muskoka District Health Unit
 SDHU: Sudbury & District Health Unit
 TBDHU: Thunder Bay District Health Unit
 THU: Timiskaming Health Unit
 TPH: Toronto Public Health
 WECHU: Windsor-Essex County Health Unit
 YORK: York Region Community & Health Services Dept.

APPENDIX B – ACES Syndromes

<u>Syndrome Code</u>	<u>Syndrome Description</u>
ALLERG	allergic reaction, angioedema (not bee sting)
AST	asthma, wheeze, difficulty breathing, SOB
BITE	human, animal, bug (not tick related)
BRONCH	bronchiolitis, RSV
BURN	burns –chemical and thermal, electrical shock
CAD	coronary artery disease, chest pain
CARD	pericarditis, effusion, myocarditis, endocarditis
CDIFF	c difficile
CELL	cellulitis, non wound infection, non abscess
CHF	congestive heart failure
CO	carbon monoxide exposure or other gases-sulphur etc
CONC	concussion, head injury,
COPD	chronic obstructive lung disease,
CROUP	croup-PIV
CV	cardiovascular (excludes MI and strokes; includes peripheral vascular disease)
DEHY	dehydration
DENT	dental pain, infection, trauma to tooth etc
DERM	rash, undifferentiated, lesion, wart
DM	diabetes and its complications
ELECT	electrolyte imbalance, hyperkalemia, hypomagnesium, hyponatremia
ENT	related to ears nose throat-surgery, non infectious, tinnitus (not in GNSURG)
EOH	alcohol and complications-intoxication, addiction, withdrawal or end organ damage
FALL	falls undifferentiated
FBI	foreign body ingestion-nose to anus
FEB	febrile neutropenia
GASTRO	gastroenteritis
GB	Guillain Barre syndrome, flaccid paralysis
GI	GI bleed-upper and lower, epistaxis, hemoptysis
GMED	general medical admission-other-unconscious weakness, unwell, chronic diseases
GNSURG	general surgical admission-appendicitis, cholecystitis, bowel obstruction
GYN	gynecological, bleed, hysterectomy, PID
HEAD	undifferentiated headache, non traumatic
ENVIRO	heat stroke, heat syncope, heat exhaustion, cold-frost bite, hypothermia
HEM	hematological condition, anemia, thrombocytopenia, not oncological
HEP	hepatitis, undifferentiated and A,B,C
ILI	fever, myalgia, undifferentiated flu
INF	non specific infections-potential interest to public health, epiglottitis, tonsil abscess
INJ	sprain, strain, laceration, dislocation, bruise, swelling
INS	insomnia, sleep disorder

INT	intusseption
LAC	lacerations
MEDREN	medication renewal, request
MEDSE	medication side effect-not OD
MEN	meningitis and encephalitis
MH	mental health
MHS	suicidal ideation, attempt or overdose
MIGR	migraine
NEC	necrotizing fasciitis, severe cellulitis, gangrene
NEURO	dementia, Alzheimer's, stroke, seizure, vertigo, syncope, fainting
NEUS	neurosurgery-aneurysm, bleed etc, subdural , SAH
NEWB	newborn
OBS	related to obstetrics
ONC	oncology
OPI	opioid intoxication, addiction overdose, withdrawal
OPTH	general ophthalmological condition
ORTHF	fracture, non hip
ORTHH	fracture of the femur or hip
ORTHO	orthopedic elective surgery, cast change or assessment
OTHER	null, missing, other
PAIN	pain, undifferentiated, non cancer, radiculopathy, back pain, sciatica
PE	pulmonary embolism, DVT, VTE
PHYSC	physician consultation
PN	pneumonia
PO	post op infection or complication
REN	renal failure, dialysis, renal disease and its complications
REPORT	reportable diseases
RESP	respiratory infection non croup, non bronchiolitis
SEP	bacteremia, SEPSIS
SI	smoke inhalation, chemical, gases
SOC	social admission
TEST	test results, blood or diagnostic imaging, xray, US, biopsy,transfusion, tube change
THOR	thoracic, pneumothorax
TICKS	ticks
TOX	toxicology-not alcohol or opioids, withdrawal, substance abuse, chemical exposure
TRMVC	trauma from a MVC/ATV
TRO	trauma from another means, fall etc.
TRW	gunshot or stab, violence, assault
TRS	sexual assault, rape
URO	urological -stones, prostate, UTI
VOM	vomiting-alone-NORO like illness, not secondary to chemo or with other symptoms